

## CLAIMS

I/We claim:

- [c1]           1.       An apparatus comprising:  
two or more remote units, each remote unit comprising:  
a radio transceiver for communication with a base; and  
a memory module, wherein the memory module includes an indication of a combination of two or more tones, the combined tones representing an indication of an access request and a priority request; and  
a stationary base station of a fixed wireless network, the base comprising:  
a wireless transceiver for communicating with a publicly switched telephone network and the Internet;  
a radio transceiver for communicating with one or more remote units;  
a memory module; and  
a processor, the processor being adapted to receive the indication of an access request and a priority request from the two or more remote units, wherein the processor is further adapted to analyze the priority requests to determine which remote units will be granted access to an uplink channel, and wherein further the processor is adapted to transmit an indication of which remote units have been granted access to an uplink channel based in part on the priority request represented by the combined two or more tones.
- [c2]           2.       The apparatus of claim 1 wherein indications of an access request and a priority request are combined in two OFDM tones; wherein further the base and remote units communicate via a collision-free multiple access protocol; and

wherein further both the remote units and the base include a data medium access control layer for use in transmission..

- [c3]           3.       A method of determining priority between two or more remote units requesting uplink access to a network, comprising:
- receiving an access request from at least two remote units, wherein the access request is a request for uplink access to the network, and wherein the access request includes an identification of the remote unit;
  - receiving a priority request from the two remote units, wherein the access request and priority request are encompassed within a set of tones;
  - prioritizing the priority requests received from the remote units to determine which of the two remote units will be granted uplink access to the network;
  - based on the prioritizing, transmitting an indication signal to one of the two remote units, wherein the indication signal represents that the one indicated remote unit is allowed to transmit on an uplink channel.
- [c4]           4.       The method of claim 3 wherein the tones encompassing the access request and priority request are OFDM tones.
- [c5]           5.       The method of claim 3 wherein two tones encompass the access request and priority request.
- [c6]           6.       The method of claim 3 wherein three tones encompass the access request and priority request.
- [c7]           7.       The method of claim 3 wherein four tones encompass the access request and priority request.

- [c8]           8.     The method of claim 3 wherein the priority request is based on the type of remote unit.
- [c9]           9.     The method of claim 3 wherein the priority request is based on a user device associated with the remote unit.
- [c10]          10.    The method of claim 3 wherein the priority request is based on the type of application to which the transmitted information is related.
- [c11]          11.    The method of claim 3 wherein the priority request is based on a level of service associated with a user.
- [c12]          12.    The method of claim 3 wherein the base and remote units communicate via a collision-free multiple access protocol.
- [c13]          13.    The method of claim 3 further comprising creating queues for each level of priority.
- [c14]          14.    The method of claim 3 wherein the highest priority access requests are placed ahead of all lower priority access requests in priority queues.
- [c15]          15.    A method, for use at a remote unit, of requesting access to a network, comprising:  
                at the remote unit, transmitting an access request to a base, the access request including an identification of the remote unit, wherein the access request also includes a priority request, wherein the access request includes a set of tones the encompass the priority request, and wherein the base is coupled to the network and communicates wirelessly with at least a part of the remote unit;

at the remote unit, monitoring a communications channel to determine if the remote unit has been authorized to transmit information; and  
at the remote unit, if authorization is received, transmitting information to the base.

[c16]           16.    The method of claim 15 wherein the access request includes at least two OFDM tones.

[c17]           17.    The method of claim 15 wherein the access request includes two OFDM tones that convey the access and priority requests, and wherein further the priority requests allow for at least three levels of priority.

[c18]           18.    The method of claim 15 wherein the access request includes three or more OFDM tones that convey the access and priority requests.

[c19]           19.    The method of claim 15 wherein remote unit is a user device, the user device being coupled to another device that includes a wireless transceiver for communicating wirelessly with the base.

[c20]           20.    The method of claim 15 wherein remote unit is a facsimile machine, the facsimile machine being coupled to another device that includes a wireless transceiver for communicating wirelessly with the base.

[c21]           21.    The method of claim 15, further comprising:  
                at the remote unit, receiving an indication of a request for a transmission from one or more user devices, wherein the access request to the base is determined at least partially by the requests received from the one or more user devices.

[c22] 22. The method of claim 15, further comprising:  
at the remote unit, receiving an indication of a request for a transmission from one or more user devices, wherein the access request to the base is determined at least partially by the requests received from the one or more user devices; and  
accessing a lookup table to determine a level of priority for each of the one or more user devices.

[c23] 23. A computer-readable medium whose contents cause control logic in a base to perform a method to determine priority between two or more remote units requesting uplink access to a network, comprising:  
receiving an access request from at least two remote units, wherein the access request is a request for uplink access, the access request including an identification of the remote unit;  
receiving a priority request from at least two of the remote units, wherein the two or more tones indicate an access request and a priority request;  
prioritizing the access requests based on the received priority requests;  
and  
transmitting an indication of at least one remote unit that is allowed to transmit on an uplink channel.

[c24] 24. An apparatus for prioritizing access requests from a plurality of remote units comprising:  
means for receiving an access request from at least two remote units, wherein the access request is a request for uplink access, the access request including a priority request, wherein the access request and priority request are included within two or more tones;

means for analyzing the priority requests received from the remote units to determine which remote units will be granted uplink access to the network;

means for prioritizing the access requests; and

means for transmitting an indication of at least one remote unit that is allowed to transmit.

[c25] 25. A computer-readable medium containing a data structure for use by a fixed wireless network, the data structure comprising:

an indication of an access request by a remote unit; and

an indication of a priority request by a remote unit, wherein the indication of the access request and the indication of the priority request are included within two or more tones, wherein further the data structure is used with a collision-free multiple access protocol.

[c26] 26. The computer-readable medium of claim 25 further comprising an identification of the remote unit.

[c27] 27. The computer-readable medium of claim 25 wherein there are two OFDM tones.

[c28] 28. The computer-readable medium of claim 25 wherein there are three or more OFDM tones.